1:Ingrams G-5 (1934 35)1936 MM2 Hadhramaut MM2

Prisons.

697 In Mukalla there is one prison, and " lock-ups " in the police stations. There are said to be 20 warders in the prison who wear a khaki uniform, but I only saw six. The prison is in the charge of the Commander of the Forces. On inspection the only prisoners seen were political, some 30 men and boys who were hostages from the various tribes and who are changed every month.

The headquarters of the uniformed police contains two cells where short sentences are served and remand prisoners detained. It was said that prisoners were not kept there for more than 24 hours.

CHAPTER XIV.

SOCIAL SERVICES IN QU'AITI TERRITORY.

Health Administration.

743 There is only one Government medical institution and that is the dispensary in Mukalla.[1] It is in charge of a Hindu doctor assisted by a compounder and three dressing boys. The doctor took over his duties in April 1934, and from the 3rd of that month to the end of September he had treated 1,575 patients. In the month of October the number was 147. He performs only very minor operations and the figures include eight or ten such cases. Most of the doctor's work is in the dispensary itself, but he is sometimes called in for domiciliary visits. The dispensary is open from 8 to 12 in the morning and from 5 to 8 in the evening for urgent cases.

164 The principal ailments are diseases of the eye, eye trachoma being very prevalent, and rheumatic affections of the joints. There is no malaria in Mukalla, but cases come in from outside. The doctor possesses no microscope, but he has not traced any cases of ankylostomiasis or bilharzia. There is practically no syphilis, but gonorrhoea is fairly common. Constipation is chronic. From April to October he had used almost two hundredweight of magnesium sulphate. Tropical ulcers are fairly common.

164 751 Mr. H. M. Heald in his report on the agricultural resources says " Smallpox seemed to be the most fatal disease in the interior, and in some years whole villages were wiped out; I was informed that for generations they have had a system of inoculation performed by taking the blood from a child with the disease and rubbing it in a cut made on the arm, generally between the shoulder and elbow. In Mukalla, being the seaport connected with the east, they sometimes had plague, but as far as I could gather they had been free for a number of years."

743 In addition to his dispensary work the doctor is in charge of the Port Health work for ships and dhows, and has recently been appointed medical officer of health in the town.

[1] There may now be a dispensary operating in Shihr.

1: Ingrams G-5 (1934-35)1936 MM2 Hadhramaut MM

The sanitary systems, if any, vary throughout the large towns of the Hadhramaut. There are no drainage or sewerage systems in Mukalla. The houses for the most part are equipped with pit-latrines cleared every six months or a year. Waste water runs out from gullies projecting from the walls of the houses. At the time of my first visit there were 25 sweepers in charge of a *muqaddam* who were said to work from early morning till noon, and from two till six, but, apart from the main market street, there appeared to be little evidence of their activities. Since that time the number has been slightly increased, and, under the doctor's superintendence, the streets are somewhat cleaner. 364

In Shihr the waste water is allowed to settle into pools. As a consequence mosquitoes are a serious pest, but there is said to be little fever. There were no anopheles amongst specimens I captured. In Shibam there is a system of narrow gutters running down the middle of the streets. These become congested with rubbish and are rarely cleaned out, but when they are the refuse is sold.

Water Supply.

The water supply of Mukalla is brought from a reservoir at Baqrein, about four miles distant. The source is a mile further away at Bakezebur where there is a long series of deep wells, mostly protected by a stone coping but with no covering. These wells were constructed by labourers brought from Gheil ba Wazir where there are men " who know how to make waterworks ". The wells are connected at the bottom by a subterranean passage, used by those who clean the channel, along which the water flows till it emerges into an open cement channel leading to the reservoir at Baqrein. This reservoir is divided into compartments and the water passes through them into a delivery pipe. The outfall to the delivery pipe is partially protected from debris by a wire trap, and just outside the reservoir there is a covered manhole. There is no filter system and for the greater part of its length the supply is entirely unprotected, but the water is clear and apparently clean. It is conducted in pipes to the side of the mountain, along which it runs in a covered masonry channel, except where it is carried across gaps in pipes supported by piles. In the town there are reservoirs fitted with taps from which the water carriers draw their supply. Water supply is only laid on to the palaces and a few mosques. 365 312

The work was planned and begun by Sultan 'Awadh as a *Waqf* and was completed by Sultan 'Umar. It reflects great credit on the Mukalla administration, and if some protective measures were adopted would be, I should imagine, an unimpeachable supply. It is fortunate that cholera and typhoid are apparently unknown in Mukalla as it would be extraordinarily easy to contaminate the supply which, as I say, is unprotected, unfiltered, and not chlorinated. 365 653 164

There are several wells in Mukalla in which the water is brackish. The palaces, the Wazir's house, and the guest-house are fitted with 312 000

18:Ingrams G-3 (1934-36)1938 MM2 Hadhramaut MM2

in which tribesmen will not willingly engage, and as they are so conservative it will be long before they forsake their ancient occupation (or lack of occupation) and adjust themselves to fresh possibilities.

In the Hadhramaut however if the main producing area is to be the main wadi system, there is there a population which is already largely agriculturally minded. Shibam is chiefly a commercial centre, the principal market of the interior, but outside Shibam and throughout the other towns of the wadi the atmosphere is rural and people are largely land owners or workers on the land. In addition the tribes have become settled and it is interesting to note that most of them have settled in *badu* sections. Those tribes living in the great wadi are settled, but they have relations in the barren areas who are Badawin. If it becomes possible not only to make the country more self-supporting as regards its own food supplies, but also to produce something for export, it will benefit not only the growers but also the Badawin living between the coast and the wadi, for at present they have to take their camels back to the coast unloaded, since the Hadhramaut only consumes. Recently we forwarded samples of cotton and castor oil seed, which grow practically wild in the Hadhramaut without irrigation, to the Imperial Institute for examination and the reports were most favourable. This is not to say, of course, that their cultivation can be profitably undertaken without much further investigation and some experiments, but they are two possible lines of development, and now that an Agricultural Officer is being appointed new crops for systematic cultivation may be found. Water is of course the chief need, but that also we hope to investigate and there is every indication that there should be plenty of it in the areas most fit for agricultural development.

Mukalla is the political and commercial capital of the whole country. Here the Qu'aiti Sultan lives, and it is the headquarters of the Mukalla Government, and my own headquarters as Resident Adviser to His Highness and as the officer responsible to the Governor of the Aden Protectorate for political relations with the five easternmost Sultanates of the Protectorate. Mukalla is the one place that most of the several hundreds of visitors have seen. It is the most important port on the south coast of Arabia between Aden and Muscat, but somehow does not yet seem to have left the category of places which travellers take for granted, perhaps because until my wife and I took up our abode there had never been permanent European residents. In the last few months the European residents have risen to six, and though the place looks very much the same to us as it has always done, visitors say it is changing. A ship's captain who landed a short time ago asked in the bazaar how it was that port facilities had improved and how it was that the town looked cleaner. I believe the most enduring memory of Mukalla to people who have landed has been the stupendous fly population and the smells of dried fish and other even less pleasant substances. I would not go so far as to say that the flies and the smells have disappeared, but a recently trained local sanitary inspector with a corps of sweepers and sanitary dustbins have made some difference.

The climate of Mukalla is on the whole pleasant enough, and with the gradual cleaning up of the town healthy enough. Steps are now being taken to cope with the mosquito nuisance, for last year we had a particularly bad

18:Ingrams G-3 (1934-36)1938 MM2 Hadhramaut MM2

epidemic of malaria, the sequel to the heaviest rains the country had had, according to the old inhabitants, for twenty-two years. It was astonishing to see after a few hours of heavy rain how much damage had been done, for rocks and debris were washed down from the cliff behind the town and the main bazaar street cut across in many places by torrents.

Like every seaport Mukalla is thoroughly cosmopolitan and you find in its bazaars representatives of Arabs from all the coastal parts of South Arabia and the Red Sea and Persian Gulf, as well as Somalis and other Africans. One curious strain of not infrequent visitors are long-bearded Mongolian pilgrims who flourish incomprehensible Chinese passports at me and, speaking no Arabic or other language which can be understood locally, apparently desire onward travel facilities. There are quite a number of Indian visitors and residents too, including Banian shopkeepers, and in the upper layer of Mukalla society the various races, Indian and Arab, mix quite happily. We all attend each other's parties and the Government servants of Mukalla have started a very good club. Amongst the various festive occasions of the last year or so none was greater of course than the Coronation celebrations. The streets and house-tops were gay with flags and I can remember no more beautiful sight than the illuminations at night. The Palace, the Residency, the Government offices and the principal mosques were outlined in coloured lights, and I should think Mukalla that night burnt almost as much incense as Pliny complains of Nero burning at the funeral of Poppaea. Almost every house that had not coloured lights heaped incense in piles along its roof parapets and the coloured lights and the flaming incense were wonderfully reflected on the waters of the harbour, while clouds of smoke filled the streets with a sweet-scented fog and completely obliterated the smell of the fish. Now of course Mukalla is every night reflected in the water, for electric light has been introduced and the greenish glow of the new street lights is visible far away. At the Sultan's request steps are being taken to reorganize and train his forces and to raise and train forces for the Kathiri Sultan, and thanks to Captain Hopkins who has been in Mukalla for nearly six months the standard is already much higher than formerly.

After four until sunset Mukalla walks abroad, sitting either in the cafés on the water front or wandering out through the western gate and sitting in groups above the camel park and the road which leads to the interior. This is the familiar road which has been trodden and described by most of the older generation of travellers, but I suppose that few Europeans in future are likely to follow it on camel or donkey as we did on our first visit three years ago, for I hope it will not be long before the new motor road is finished. The 20 miles or so which are now completed are really a remarkable achievement, for the road is a mountain road, skilfully built up with stone along the hill-sides and well above the torrent beds. The line was followed and mapped by Captain L. G. Beach, R.E., who in a short visit also fixed the latitude and longitude of Shibam and Tarim, but there has been no expert supervision and the builders, all men from Mukalla, have shown themselves extraordinarily skilful.

Nowadays most travellers for the interior go by car, either along the beach to Shihr or, if the beach is not open, along the inland road which

24:Meulen and Wissmann T-3 (1931)1932 MM2 Hadhramaut MM2

ing by having to toil along in the tormenting heat. There was no need for hard climbing and descending, the way lay smoothly over gently sloping plateaus, allowing a view on low, flat table-mountains and not very deep wādīs. In the surrounding mountains we saw many horizontal lines, ancient plateaus or geological strata. Vegetation became scantier and scantier as we went further. We only passed by two small [redacted]th an insignificant bit of cultivated ground, entirely depe[redacted]upon rain-water. At the first village, Dahma, we rested for the afternoon in a *murabba'a*. Here a few people from the village came to ask us for medicines. Kneeling beside the medicine-chest in the burning sun, I tried to doctor the patients: eyes closed up tight by inflammation were cleansed with cotton-wool and boracic water, after which I used protargol, drop by drop; aspirin was given, in a cup of hot tea with lemon, for headaches and fever; festering wounds were cleaned and then bound up with Peruvian balsam; castor oil, worm-cakes and quinine were also dispensed more than once. The population as a whole gave an impression of health. Although they wash their bodies but seldom and smear them with *samn* and indigo, it is surprising how little one sees of itch and other skin troubles. The only malaria which occurs on the *djōl* is brought in from the lower-lying districts.

The Bedouins are mostly small and slightly built, but they have great powers of endurance and do not give the impression of being underfed. The boys who belonged to our caravan ran the whole day long, helped energetically morning and evening, and ate only two meals a day (some dates, rice and a piece of dried shark's meat, sometimes unleavened bread baked in hot ashes).

Dahma appears to consist of twenty or so small houses, the lower parts of which are built of rough stones, and the upper parts of dried mud. A large, square tower, entirely built of stone, serves as a defence for the village and as the residence of its mayor. On the border of the village is a mud-built, communal threshing-floor; there are also ovens for baking meat,

that is to say, small piles of stones on which a fire is made till they are hot and on which meat can be roasted.

[164] The number of people in this village who seemed to be afflicted with blindness or with other diseases of the eye was startling. The cemetery, which lies outside the village, is large; rows of graves covered with little hillocks of stones give the impression of not yet being old. Dahma has, apparently, been decimated by an epidemic. The neatly cultivated fields lie awaiting the rain. Two date-palms as well as some *nibq* trees increase the parched and barren impression of the place.

Apparently we are over the watershed here and in the river-basin of Ḥaḍramaut Proper. The landscape looks dryer and emptier of vegetation. The *euphorbia* bushes have neither fruit nor blossom, and the few grasses are dried up. After passing Dahma we saw an artificial pond, at present dry, made at the cost of much labour, which is intended to hold the water after rain.

Half an hour after sunset we reached Bureyyira, our quarters for the night, situated close by a small village.

7. AN EXCURSION TO THE RUINS OF THE PEOPLE OF ʿĀD.

There were great things on the programme for May 14th. We had often questioned our Bedouins about ruins and inscriptions, and they understood what we meant, for all of them knew about the remains of the towns and graves of the people of ʿĀd and Thamūd, the original inhabitants of the land, whom Allah had swept from the face of the earth, in punishment for their many sins. The groups of ruins are actually situated more towards Ḥaḍramaut Proper, with their centre in the direction of the Yemen. Probably we were setting foot here on the borderland of Sabaean civilisation. Old Aḥmad, one of our Sēbānī Bedouins, attracted by the promised reward, said that he had pondered well over it and remembered that there were inscriptions, painted by the people of ʿĀd, on a wall of rock in Wādī Thiqbe, not far to the north-east of our route, and that, besides

24:Meulen and Wissmann T-3 (1931)1932 MM2 Hadhramaut MM2

753 and our doctor has had to adapt himself temporarily to it and
758 to fixed wishes regarding diet, in anticipation of the growth of better understanding and more trust. The result of his work as the first and only doctor in all Ḥaḍramaut is not as great as one would expect. Sayyid Abū Bakr himself is not yet sufficiently convinced of the value of western medical art to allow the never ending outlay on medicines and instruments for the expert help of the doctor. The first nurse in Terīm was an Arab from one of the African coast towns, who missed his cinema and café so much that he speedily fled from the place of banishment, to return to the towns where he could enjoy the blessings of western civilization. Thus the doctor has all the work again on his own hands.

743 An enormous mud building has been placed at his disposal. In it he lives, has his pharmacy, the polyclinic and the beginnings of an operating-room. Further, one of the young el-Kāfs, who was assistant to an Egyptian dentist who formerly worked here for some months, has a room where, equipped with modern instruments, he practises dentistry.

●164 According to the doctor, Ḥaḍramaut seems to be a healthy country. Among the lower classes there is, however, a good deal of eye disease, and it is also true that malaria makes its appearance in the autumn. What will be the eventual outcome of this beginning of medical help will depend on the tact and devotion and staying-power of the young doctor.

312 After this we go with the doctor on a walking tour to see the sights of the town of Terīm. First of all, naturally, we visit the remains of old Terīm, on the borders of the residential area of the town; it consists of a bare low hill on whose top stand the ruins of the once great and mighty castle. There are always wells for drinking-water in castles of this kind. These wells are very deep as they are in the inner courtyard of the castles and are, consequently, dug from the summit of the hill. From this ruined castle one had a good view over
346 Terīm so rich in mosques, palaces and ... graves. The popular report in Ḥaḍramaut is that the town possesses 360 mos-

24:Meulen and Wissmann T-3 (1931)1932 MM2 Hadhramaut MM2

That night a wolf came near our bivouac. The Bedouins heard his call in the encircling mountains and rose in haste to gather the camels together inside the camp.

On the following morning, June 19th, we rose very early, for it was growing important to reach Makalla as soon as possible. The caravan was in motion at a quarter past four and we made a straight line for the sea coast, scrambling laboriously over granite boulders. By ten past eight we had reached Mēfaᶜ, a forlorn little village by the sea at the mouth of Wādī Ḥadjr.

The river here has shrunk till it is no more than a swiftly flowing stream. No doubt the major portion of the water flows underground to the sea.

The population of Mēfaᶜ dwells for the greater part in miserable shacks; the few mud houses are dilapidated and poor and dirty. The house where the soldiers live was opened for us; it was the best to be had, but still miserable enough. Only one soldier still remained; his companions had died of the fevers for which Mēfaᶜ has an unenviable reputation. Yāfiᶜ soldiers from the healthy highlands are among the least resistant to the fever of the damp, hot coast. When this soldier's last comrade died, he had fled from the house, not daring to live there any longer. No food was to be had from the villagers for love or money, but the soldier shared some of his provisions of rice and eggs with us. He told us that the people of the place are desperately poor and unhealthy. Emigrants come here, it is true, but they do not stand it for long, and only a portion of the arable land is under cultivation. The Qeᶜēṭī soldiers regard transference to Mēfaᶜ as equivalent to a death sentence. Their constitutions are not resistant against the endemic fever, they have not enough pay to feed themselves well, and the people of the village are so poor and miserable that nothing can be got from them.

Whilst lying in a corner of a little room, which smelt of indigo, I got a violent attack of cramp in the stomach, and it looked as if I should not be able to go further. Luckily the

5:Gt. Brit. . Colonial Office G-3 (1947) 1949 MM1 Aden
Hadhramaut MM21

Liaison

In the first half of 1947 the post of Protectorate Education Officer was filled, a post which had been vacant for a year. This Officer's duties include tours of inspection throughout the Protectorate, and advice and assistance, through the British Agents, where required.

In the Eastern Aden Protectorate advance was somewhat hampered by the absence of the Sudani Adviser for the greater part of the year on leave. However, estimates for grants under the Colonial Development and Welfare Act were prepared and despatched; these include schemes for enlarging the Intermediate School at Gheil Ba Wazir and for primary schools for the Kathiri State and Wahidi area. A number of scholarships for Hadhramis were given by the Governments of Syria, Egypt and Iraq.

HEALTH

Medical Report for the Western Aden Protectorate

His Majesty's Government finance a small medical service in the Western Aden Protectorate. The area covered is large, communications are poor and access to many parts is difficult. In consequence only a small proportion of the population, who are in great need of health services, can be visited and treated. Nevertheless, 16 dispensaries are maintained at strategic points in the Protectorate. New dressers are given instruction in hygiene and elementary medicine and nursing care, and are then sent out to open up new areas or to work with more senior dressers in the established dispensaries. They have to deal with diseases common to all races. Certain tropical diseases such as schistosomiasis and dysentery are very prevalent.

Drought and the vagaries of the climate also play their part in undermining the health of the inhabitants. The third year of drought in Sublihi country undoubtedly had an effect on the prevalence of tuberculosis, dental caries and vitamin deficiency diseases in that area.

Apart from the dispensaries in the Protectorate, the Keith Falconer Mission Hospital in Sheik Othman which trains the dispensers also welcomes up-country patients. More would come than do at present if ignorance and superstition did not prevail in the Protectorate. Again, for many the road to the hospital is physically difficult and it is certain that they come only as a last resort and after long deliberation. In consequence doctors do all they can to visit the dispensaries as frequently as possible and to spend adequate time at each one to treat the sick, and to give instructions to dressers to keep them up to date.

Famine Relief

During 1947 the situation in the Hadhramaut continued to improve. At the beginning of the year there were 1,112 persons being fed in the kitchens, which were closed by the end of March, leaving only Malja—a relief centre for those incapable of work—whose 716 inmates in March were gradually reduced to 227 in December. Nuqra dam, the major famine relief work undertaken, was finished in June. Remittances

6:Gt. Brit., Colonial Office G-3 (1948) 1950 MM1 Aden
Hadhramaut MM2

culture and winning a reputation for the Hadhramaut as a centre of religious education.

No parallel cultural or social development occurred in the recent past in the other areas of the Eastern Protectorate or in the Western Protectorate. Any development of education initiated by Government had therefore to contend with two different problems. On the one hand, there was in the Hadhramaut an appreciable number of cultured people who might become teachers after a short time of training, but in whom this advantage was offset by a tendency towards religious fanaticism and obscurantism. On the other hand, in the rest of the Protectorate the people were mainly illiterate and there was thus no immediate supply of potential teachers. This deficiency of trained teachers remains the biggest problem in Protectorate education to-day.

HEALTH

Western Aden Protectorate

The development of the Protectorate Medical Service was rather upset in the past three years by numerous changes of senior medical staff. However, one advantage came from this, namely that in the drawing up of a plan for future development, co-operative help and advice was given by every doctor and nurse who ever worked in the Protectorate.

At the beginning of the year, a three-month course was given for new tribal dressers, who were posted to work under senior dressers in the Protectorate.

It is estimated that in the course of the year 50,000 patients were treated in the 18 dispensaries. Malaria, dysentery, schistosomiasis and tuberculosis were the four most prevalent diseases. Obstetrical problems and gynaecology offer a very large field for research. Owing to customs necessitating the seclusion of women any estimate of these problems is pure conjecture. In spite of these restrictions, the Medical Officer attended a great many during his visits, especially in Beihan at the very edge of " the empty quarter " of Arabia. A number of those who otherwise would never receive surgical treatment were flown down to the hospital at Aden. Venereal disease was unfortunately on the increase in Abyan, where crowds of people of all kinds came to find work in the agricultural project there.

Many visits including some of several days duration were paid by the Medical Officer to the various dispensaries in the Protectorate during which between 4,000 and 5,000 selected patients were treated. Besides those patients who found their own way down to hospital in Aden, 150 or more were brought down on the Protectorate Medical Officer's recommendation.

HOUSING

The settled Western Aden Protectorate population is housed for the main part in mud-brick and stone dwellings, while the nomads live under camel-hair tents, straw huts, thatched-palm huts, and even under matting placed over vegetation or trees.

7: Gt. Brit., Colonial Office G-3 (1949-50) 1951 MM1 Aden
Hadhramaut mm2

311 471 Inhabitants of Wadi Du'an, an area with an ever-present threat of famine, were persuaded to purchase some of the large tracts of good arable land and shallow wells lying fallow and idle in the main Wadi Hadhramaut in the hope that they will gradually move from their over-populated wadi. Three companies were formed by Duanis, with a capital of well over Rs. 1,00,000 for the purpose of cultivating hitherto dead lands at Dar-Assab, Aqad and the area at Hautat Ahmed bin Zein in the main wadi, while Du'an merchants began to take an interest in existing date palm groves in the area. The local States were empowered to allot dead lands to farmers if the owners failed to cultivate them.

An agriculturai syndicate formed to develop the Meifa area of Wadi Hajr with a capital of Rs. 4,00,000 has been active during 1950. The planting of date palms in the area has started and the syndicate [164] allotted lands and gave advances to some 240 Subians—but up to now there is some reluctance on the part of agriculturists from other areas to settle down and work in Meifa owing to the prevalence of malaria there.

In November, 1950, two windmills were imported for experimental use in irrigation, one being installed at Buweish in the coastal area, the other being sent to Sai'un.

Co-operation

474 The Beihan Farmers' Association had a difficult year. A large proportion of the barley crop had been sown early and, in January and February, frost damaged the heading crop, seriously reducing yield and quality. As a result the Association deferred collection of up to 50 per cent of the outstanding loans which were carried over to the Saif and Kharif crops and to the winter crop of the 1949-50 season. Excellent conditions at the end of the year gave the Association full confidence in its operations.

The credit facilities for seed and cash given by the Association enabled the cultivators to carry on without much recourse to merchants and moneylenders.

FISHERIES

228 The Fishery Department did not begin work on a permanent basis until the end of 1949. During 1950 activity has been mostly exploratory. Unfortunately, winch trouble in the fishery vessel severely limited the amount and nature of the trial fishing that could be done, but practically every fishing village in both Protectorates was visited, and also the islands of Kamaran in the Red Sea and Kuria Muria, 700 miles east of Aden off the Muscat coast. The information obtained about the fishing population and its activities forms a valuable basis for development plans.

In general, the observations made in the 1948 report still hold good. The winter sardine seasons of 1949–50 and 1950–51 have, unfortunately, been little better than 1948–49. There has been a definite but slight improvement, but catches of sardines and their attendant predators are

7: Gt. Brit., Colonial Office G-3 (1949-50) 1951 MM1 Aden
Hadhramaut mm2

871 under the auspices of the British Council. At the end of 1950 five Hadhrami students at Bin Khaldun School in Syria gained the first five places in the final class results for the year.

Twenty-two Qu'aiti pupils are now studying outside the Hadhramaut, nine being in the Sudan, five in Syria, four in Egypt and four in Iraq. The scholars in the Sudan are being financed by the Qu'aiti Government, while the remainder are being paid for from the Mukalla Charitable Fund. There are seven Kathiri students abroad, two being in Iraq, and five in Syria. Two of these students are being financed by their parents, while the rest are supported by the Tarim Brotherhood.

HEALTH

Western Aden Protectorate

744 Two outstanding developments have characterised the growth of the Protectorate Medical Service in 1949 and 1950. First, the ten most promising dressers were called in from their tribes in the mountains, deserts, valleys and coasts of the Protectorate for a year's course in curative and preventive medicine at the Keith Falconer Hospital, Sheikh Othman. Secondly, the first major malaria control scheme has been successfully undertaken at Abyan. This area which was once a death-trap due to malaria is now virtually rid of the anopheline mosquito. This enterprise was financed by a grant under the Colonial Development and Welfare Act in 1949 and has subsequently been carried on by local funds.

Major tours were made to the Dhala', Dathina and Beihan areas besides the usual routine visits to the twenty dispensaries.

● 164 743 758 Malaria, dysentery, tuberculosis and malignant malnutrition with its associated conditions remain the most prevalent diseases. Trachoma is very prevalent at the desert end of Beihan. There is very wide scope for nurses and lady doctors who can stand the rigours of the road, who will learn Arabic and who will take to heart the welfare of the women and children. On the whole the dressers are doing a good piece of work amongst their own tribes. There are six dispensaries between 3,000 and 5,000 feet up, three dispensaries in the mountains at 7,000 ft. or more—two of which are reached on foot and one by air—and the rest are in Subeihi, the Wadi Tiban, Abyan and the coast.

Many patients come too late for treatment, but after one has seen the difficulties of the roads it is astonishing that so many of them come at all, and it is for this reason that the dressers visit the villages from their dispensaries and the medical officer and nursing sister visit all areas as much as possible.

744 Recently a visit was made to Mukalla and Sai'un to advise about public health work, but the demands of the Western Aden Protectorate are so great and the staff so small for its needs that there is little time left for the Eastern Aden Protectorate.

In 1949 when the Protectorate Medical Officer was on leave, Dr. R. B. Smith, of the Keith Falconer Scottish Mission Hospital, acted in an honorary but full-time capacity.

A case of smallpox in Audhali area was immediately and effectively dealt with by Dr. Affara, also from the Keith Falconer Scottish Mission Hospital, and 4,500 people were vaccinated. 744 751

Eastern Aden Protectorate

In the Eastern Protectorate, advances in medical and public health services were retarded in early 1949 by lack of staff. It was not until late in 1950 that the staff situation was relieved by the arrival of a medical officer from India for the Kathiri State and of a German lady doctor from Germany for Shibam. 744

With the obvious exception of cases of scurvy and malnutrition during the famine of 1949, there was a very mild outbreak of small-pox in Mukalla in February and March, 1949, and sporadic outbreaks of malaria in particular in the coastal areas, and the health of the population has been reasonably good in the past two years. [164]

Stringent and vigorous anti-malarial measures were started in January, 1950. All pools, including the source of water supply in the vicinity of Mukalla and Shihr were oiled or stocked with larvae-consuming fish, and water collecting tanks were closed and cleaned out weekly.

An additional sanitary inspector in Mukalla was appointed during 1950.

In October, 1950, Dr. R. B. Smith, Acting Protectorate Medical Officer, was invited to visit Eastern Aden Protectorate and his recommendations on the best methods of improving and safe-guarding public health are being implemented.

In November, 1950, four soldiers of the Mukalla Regular Army and two of the Kathiri Armed Constabulary proceeded to the Keith Falconer Mission Hospital, Sheikh Othman, on an anti-malarial course for three months. 744 759

HOUSING

No greater contrast could be imagined than exists in the houses of the Aden Protectorate. 342

The most elementary are the goat-hair tents of the nomadic people, and the even more primitive shelters of some shepherds, consisting only of a mat hung on poles, or spread over a branch of a bush.

The simplest form of house for the settled population, or those who stay for some period in a place to work at harvest time, is a kind of inverted nest of brush-wood, with a little matting incorporated in places. This provides privacy and shelter from the sun, though not of course from rain if it falls, or from the all-pervading dust storms.

The most common type of permanent house is built of mud-brick in the plains and rough stones bound with mud in the hill districts, and more rarely of squared stones. Rooms are generally small (long timber being very scarce) and dark, affording a relief from the glare outside; ventilation is usually adequate and the thick walls provide

8:Gt. Brit., Colonial Office G-3 (1951-52)1954 MM1 Aden
Hadhramaut MM2

yet afford to offer pensionable service. Conditions of employment for a qualified teacher are therefore inferior to those obtainable, even in teaching, in the Colony. 875

Principal Events 873

The greatest change in the period under review was the closing down in March, 1952, of the Aden Protectorate College for the sons of Chiefs, a boarding school of primary standard which has been running for 17 years in the Colony. The College served a useful purpose and gained a high reputation in its time but was too small to be run economically. It has now been superseded by the primary schools in the various districts of the Western Protectorate.

Work on an intermediate boarding school at Zinjibar in the Western Protectorate began about the same time. The new intermediate school, which will take another three years to complete, forms a vital link between the primary schools and the Aden and Technical Colleges.

HEALTH

General 165

Protectorate health statistics are not yet available, though in places such as Tarim recent local studies show an infantile mortality rate of 439 per 1,000 live births, a rate rather greater than those previously reported for Mukalla and parts of the Western Protectorate.

Diseases 164

Important causes of sickness in the population are malaria, the dysenteries, ulcers, trachoma and conjunctivitis. Less obtrusive are pulmonary tuberculosis, bilharzia of both urinary and intestinal types, guineaworm (in patchy distribution), leprosy, dermal leishmaniasis and the common venereal diseases with, in places, what appears to be either yaws or bejel. In areas where night-soil is used as manure for salad vegetables round-worm infection is common. Where, as in the Hadhramaut towns, rigid purdah still obtains, ostemalacia, obstructed labour and puerperal fever are of relatively frequent occurrence. [291] Through failure of the capricious rainfall or floods in the winter months, famine and its associated subnutrition are an ever present threat. In certain Western States the consumption of qat (*Catha edulis*) is a cause of subnutrition and affections of the digestive tract.

Important causes of death in both young and adults are malaria and the dysenteries, and in adults pulmonary tuberculosis.

Prevention and treatment are provided by mobile health units, 743 static health units (previously called dispensaries) and hospitals. 744 Prevention is furthered by lectures, demonstrations and film shows to teachers and local administrators, and by emphasis in the training of subordinate technical staff on the preventive aspects of medicine, more particularly cleanliness, insect control, balanced feeding and the values of local foodstuffs. A series of propaganda leaflets has been planned and the first one—on malaria—issued to the public. An effort is being made among communities remote from hospitals and health units to market at controlled prices insecticides, malarial remedies and sulphamezathine in small containers with instructions in Arabic.

8:Gt. Brit., Colonial Office G-3 (1951-52)1954 MM1 Aden
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conditions as for tenants. If not owner occupiers, they take responsibility for debts incurred by tenants, to whose settlement or eviction they must agree.

Finance

	Sales: *bale of 400 lb.*	*Value* £
1949	100	5,270
1950	1,587	121,450
1951	9,890	867,088
1952	6,300	725,810

The contract with the Raw Cotton Commission extends to the season 1955–56.

Seed was sold to the value of £86,500 in 1951 and £54,870 in 1952.

Expenditure of approximately £20,000 loaned by the Colony Government on the first stage of the scheme in 1943–46 was refunded in part, and the balance handed over in the form of improvements and working capital to the Abyan Board on its formation.

Capital liabilities for loans stood at £278,307 at 30th September, 1952.

At the same date, after disposal of the current season's cotton crop, there were fixed assets worth £324,693. Cash and investment funds were available for the provision of £400,000 to a general development reserve ; £180,000 to a revenue stabilisation fund ; and £25,000 to a sinking fund.

Social Effects

The Scheme has had great beneficial influence on the general economy of the Aden Protectorate.

Peace and security have been extended to an area formerly insecure and the area has been settled by members of many tribes formerly at feud with each other in the Protectorate.

The Scheme has also been responsible for the virtual eradication of malaria in the district. This work conducted by the Protectorate Medical Service has been assisted by the Board which has guaranteed to provide a minimum of £26,000 per annum to a joint States' Medical Service ; it has also agreed to provide £20,000 for the building of a hospital.

ADEN MM1
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mosques and to storage tanks from which the commercial carriers draw water for sale to the inhabitants. Most well supplies are unprotected and exposed to subsoil and surface contamination. The ablution pools in the mosques are often heavily polluted and serve as vehicles for the transmission of intestinal infections. They also provide conditions favorable for the breeding of anopheline and other mosquitoes; also of Planorbis and Bulinus snails.

There are numerous small irrigation projects in the agricultural districts, especially in Western Aden Protectorate and the Hadhramaut, many of which have been in use for decades. They depend upon water from streams or wells and, in some parts of the highlands, from spring-fed cisterns. Pumps have been introduced in the modern developments, but in most instances water is drawn from streams and wells in the traditional manner, namely, in leather buckets by means of ropes pulled over wooden pulleys by men or animals.

Waste Disposal

The methods of sewage disposal are primitive. Septic tanks, which discharge into the main drainage system, are connected with some of the newer houses in Aden Colony, but pail privies provide the usual means of sewage disposal in both Aden and Sheikh Othman townships. In old buildings with several stories, soil pipes which may be 40 feet in length lead from the privies on the upper floors to containers below. The night soil is collected regularly from private and public latrines by the town authorities and conveyed to incineration plants. Pit latrines are employed in some quarters, but they are being abolished wherever possible. In the congested districts, the latrines are located along concrete passages between the rears of the houses and are drained to storm sewers or to soakpits. The construction of a modern sewerage system for the Colony is under consideration.

The "hang drop" method, in which closet

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H 324 shafts lead from lavatories in the upper stories to a reception chamber on the ground floor, is widely used in the larger houses in Western Aden Protectorate and the Hadhramaut. Pit or surface privies are sometimes found in the courtyards of the smaller houses, but the majority have no facilities for the disposal of sewage wastes. Indiscriminate pollution of the soil is a general practice.

Fauna and Flora

A 659 Few entomologic surveys have been made in this region, and data regarding the insect vectors and animal hosts of human disease are fragmentary. It is probable, however, that the species identified in the neighboring territories are present in Aden Protectorate under similar physiogeographic conditions.

A 136, 164 Arthropods. Mosquitoes. *Anopheles adenensis* (— *A. culicifacies adenensis*) is the most important anopheline mosquito in Aden Colony. Although it has been eradicated from Aden and Sheikh Othman townships, it persists in near-by oases, and is a major vector of malaria wherever it is encountered. In the last local outbreak in the *kutcha* hut district of Sheikh Othman, *A. adenensis* was found breeding in large numbers in the soakpits. It normally breeds A [744] in wells, shallow cisterns, irrigation canals and sluggish streams, and, before the institution of effective control measures, had become adapted to the high salinity of the saltpan seepages.

H 136, 164 *A. gambiae* is widely distributed in the Protectorate, where it probably acts as the principal vector of malaria. It breeds along the edges of pools and streams, in irrigation canals, in wells and in numerous other collections of water. *A. turkhudi*, *A. coustani*, *A. d'thali*, *A. pretoriensis* and *A. barbirostris* have also been reported from various localities.

Aedes aegypti, the usual urban vector of yellow fever elsewhere, and *A. vittatus*, a tree-hole breeder implicated in the transmission of yellow fever in endemic foci in

H 136 164 Africa, are found in the coastal area. Numerous species of *Culex* are present, including *C. quinquefasciatus* (— *C. fatigans*), a potential vector of filariasis. A species of *Taeniorhynchus* has been described from Western Aden Protectorate.

A 744 136 Mosquito control measures have been carried on by the health authorities in the Colony for several decades. They involve weekly inspections of all premises to eliminate breeding sites, the protection and the larvicidal treatment of permanent bodies of water, the reclamation of swamps and low-lying lands in the vicinity of the towns, and the supervision of the dhows using the port. The Aedes index was 0.014 per cent in 1950, in contrast with 4 per cent in 1930.

A H 136 361 511 FLIES. Flies are abundant in towns and villages, where the insanitary conditions around markets, cattlesheds and dwellings favor prolific breeding. They are most numerous between November and March. The house flies, *Musca domestica* and related species, are ubiquitous and undoubtedly play a role in the spread of intestinal and eye infections. The stable fly, *Stomoxys calcitrans*, is prevalent. Sandflies are numerous, among which *Phlebotomus papatasii* is presumably of primary medical concern. The tsetse fly, *Glossina tachinoides*, was reported early in this century from the Haushabi and the Subeihi tribal districts in Western Aden Protectorate.[9] It has not been collected in recent surveys, however, and the original observations remain the only record of its appearance outside Africa.[20]

A 744 Campaigns against flies, employing DDT, Gammexane and other insecticidal sprays in markets and public buildings, are undertaken periodically by the health authorities in the two townships of the Colony.

A H 136 164 LICE. All forms of human lice are found, particularly among the inhabitants of towns and villages in the interior. *Pediculus humanus corporis* is prevalent in the highland villages, where it is the vector of louse-borne typhus and louse-borne relapsing fever.

FLEAS. Both *Xenopsylla cheopis* and *X. astia* parasitize the rats in this region.

ADEN HM1
HADHRAMAUT HM2

They are potential vectors of plague, but no cases have been recorded for several decades. The human flea, *Pulex irritans*, is common and has been suspected of transmitting plague from man to man in past outbreaks. Species of *Ctenocephalides* undoubtedly occur, as in the adjacent territories.

H A 136 164

Ticks and Mites. Several species of ticks infest both wild and domestic animals in the rural areas. The human itch mite, *Sarcoptes scabiei*, is unusual among the schoolchildren in the Colony, although it is widespread in the poor communities in Yemen and the Protectorate.

Reptiles. The puff adder, *Bitis arietans*, inhabits some portions of the western highlands. The carpet viper, *Echis coloratus*, and the sand vipers, *Aspis cerastes* (— *Cerastes cornutus*) and *A. vipera* (— *C. vipera*), are described from southern Arabia, but their prevalance within Aden territory is uncertain.

A H 136

Rodents. *Rattus rattus rattus* and *R. rattus alexandrinus* are widely distributed. At least 90 to 95 per cent of the rats captured in the Colony have been identified as *R. rattus*. In spite of the diversity of shipping activities, *R. norvegicus* is seldom encountered. Active measures for the destruction of rodents in the bazaars and the dwellings in the towns and on the dhows visiting the port are carried on by the Colonial health authorities. No controls are exercised over the larger vessels, which have to anchor in the harbor. A representative proportion of the captured rodents are examined annually for evidence of plague.

A 136 744

Wild rodents are common, including species of *Meriones*, *Jaculus* and *Gerbillus*.

Molluaks. Foci of *Schistosoma haematobium* and *S. mansoni* infection exist in Western Aden Protectorate, but the intermediate snail hosts have not been positively identified. Planorbis and Bulinus snails have been reported from Mukeiras and Museimir, and Bulinus from the Dhala' plateau. *Melanoides tuberculata* and other species are found in several areas.

H 136 164

63:Simmons et al G-5 (1941-1951) 1954
M1 Middle East
ADEN MMI
HADHRAMAUT MM2

Colonial government. Five physicians were working in the eastern protectorate; one in the western.

Dentists. In 1950, there were 3 dentists in Aden, one of whom was employed on the government's school health program.

DISEASES

The statistics compiled from the reports of cases of illness and death in the Colony are apt to give an erroneous impression of the health status of the local inhabitants, since a considerable proportion of the cases treated in hospitals and dispensaries are immigrants from Yemen or the Protectorate. Large numbers enter the Colony each year as transient laborers or traders, while others seek medical attention which is nonexistent in their home communities. The majority are undernourished and live in miserable, crowded quarters under conditions which facilitate the spread of infection. Morbidity and fatality rates in the immigrant population are abnormally high, and affect adversely the health statistics of the Colony as a whole. In the absence of adequate laboratory facilities, the diagnosis of many diseases is necessarily provisional, and the differentiation of various types of infection is seldom made. Moreover, from 10 to 15 per cent of the deaths are usually recorded under the heading "other fevers."

The health facilities in the Protectorate are of recent origin, and although dispensaries have been established in increasing numbers within the last two decades, they are elementary and serve only a small fraction of the population. The meager information derived from the reports of a few medical observers who have toured sections of the interior and from records of admissions to the hospitals in Aden permits scarcely more than rough generalizations as to the prevalence and the distribution of specific diseases among the peoples of the Protectorate. The diseases of primary concern in this area are malaria, tuberculosis, dysentery and eye and skin infections, all

ADEN MM1
HADHRAMAUT MM2

H 164 of which are almost invariably associated with widespread undernutrition.

Diseases Spread or Contracted Chiefly Through Intestinal or Urinary Tract

H A 164 **Typhoid and Paratyphoid Fevers.** Typhoid fever is sporadic, and 10 to 35 cases are reported from the Colony each year. Over one half of the known cases occur usually among nonresident laborers. Paratyphoid fevers are grouped with typhoid in the morbidity statistics. The rate of infection is not known, but both paratyphoid A and paratyphoid B fevers are undoubtedly present. Typhoid fever is apparently endemic in the Protectorate, although recognized cases are reputedly rare in the Hadhramaut.

H A 164 515 **Dysenteries.** Dystentery is prevalent throughout this region, where the unhygienic habits of the people and the abundance of flies promote the spread of intestinal infections. From 500 to 1,300 cases are treated annually in the civilian hospitals and dispensaries in the Colony. Amebic dysentery predominates among the few cases in which the differential diagnosis is established, but a large proportion of the remainder are probably bacillary infections. Of the 589 cases recorded in 1949, 1 was diagnosed as bacillary dysentery and 48 as amebic, while 540 were unclassified. The percentage of carriers of *Endamoeba histolytica* is believed to be high: it has been estimated at 40 to 50 per cent among immigrants from Yemen, many of whom are engaged in the handling of foodstuffs in the Colony.

H A 164 A 165 167 854 146 Amebic and bacillary dysentery, as well as diarrhea and enteritis, are grouped together as "dysentery" in the official statistics. In each of the 5 years 1946-50, the dysentery deaths numbered 334 to 406, or approximately 20 to 25 per cent of the recorded mortality in the Colony. Among the 393 deaths reported in 1950 as due to dysentery, 107 were among the immigrant population. The younger age groups are most seriously affected, and the local au-

p. 246(A)

A 165 167 854 146 thorities regard undernutrition and incorrect methods of feeding as important underlying factors. The deaths in infants under 1 year of age totaled 175 in 1950, or about 44 per cent of the known dysentery deaths.

H 164 No precise information is available regarding bacillary and amebic dysentery in the Protectorate, but the high rate of infection among visitors to Aden Colony suggests that both are widespread.

A 164 361 744 **Cholera.** Cholera has not been reported from Aden within the present century, although outbreaks have followed its introduction in the past. Since no record exists of its presence in the Hadhramaut, it is probable that the dis[illegible] was largely confined to the port tow[illegible]

During the 1947 outbreak in Egypt, traffic through Aden was increased due to the quarantine restrictions imposed on Egyptian ports. Special precautions were taken by the health authorities to prevent the admission of infected individuals or goods by sea, land or air routes. Immunization against cholera was also provided for all persons handling shipping and for all health service personnel.

A 751

N 164 **Helminthiases.** SCHISTOSOMIASIS. Schistosomiasis is endemic in scattered localities in Western Aden Protectorate, especially in the highland districts above 2,000 feet elevation. Foci of *Schistosoma haematobium* are known to exist in the Jebel Jehaf and Dhala' plateau country, in the Wadi Tiban area around Museimir, and in the vicinity of Tor am Baha, Huwemi and Khor 'Umeira. *S. mansoni* is apparently more restricted in distribution, but it is found in the Jebel Jehaf and the Wadi Tiban regions.

A 164 No locally acquired infections are reported from the Colony, although numerous cases among persons from the interior are treated in the civilian hospitals each year. A large proportion of the cases seen in Aden Colony come from Yemen or from the Dhala' and the Museimir districts.

N A 136 The intermediate snail hosts of *S. haematobium* and *S. mansoni* have not been definitely established, but Bulinus and Planor-

M1 Middle East
ADEN NM1
HADHRAMAUT NM2

bis snails have been described from some of the affected foci.

ANCYLOSTOMIASIS. Hookworm infection occurs in Lahej and a few agricultural centers in Western Aden Protectorate. *Necator americanus* has been identified in the cases treated at the Civil Hospital in Aden.[20]

OTHER HELMINTH INFECTIONS. Infections with one or more types of intestinal worms are prevalent, particularly among the peoples of the Protectorate. Ascariasis is widespread. Trichuriasis and, to a lesser extent, enterobiasis are common. Hydatid disease is reported among individuals from the Colony and from the interior. Infection with the beef tapeworm, *Taenia saginata*, is enzootic among the cattle in the tribal districts, and human infections are undoubtedly frequent. Cases are occasionally encountered among immigrant families in the Colony. The pork tapeworm, *T. solium*, is rare, but infections are sometimes seen in the Aden hospitals.

Other Infections. *Brucella melitensis* is enzootic among the goats in this area, and Malta fever is diagnosed from time to time in the Colony hospitals and dispensaries.

DISEASES SPREAD CHIEFLY THROUGH THE RESPIRATORY TRACT

Tuberculosis. Tuberculosis is one of the most prominent diseases affecting the inhabitants of southern Arabia, but no precise information is available, except for Aden Colony. The high degree of undernutrition and overcrowding, and the low standards of personal hygiene and sanitation prevailing among large sections of the population, favor the spread of the infection. The disease is probably prevalent among the women who are confined to close quarters by the *purdah* system and among the young children in close contact with them. In a small tuberculin test survey covering 95 Aden township schoolboys of 7 to 12 years of age, in 1945,[2] positive reactions were obtained in 56 per cent—a rate which ranks high among those usually found in

ADEN MMI

urban communities in the Middle East. Pulmonary infections predominate, but other forms of the disease are also observed.

Tuberculosis is widespread in the immigrant populations in Aden, as shown by the fact that 58 to 70 per cent of the cases of pulmonary tuberculosis recorded in the three years 1948-50 were in nonresidents. Among the 530 cases reported in 1950, Aden was the place of origin in 152, Yemen in 193, Western Aden Protectorate in 99, Eastern Aden Protectorate in 12, and Somaliland, India and other countries in the remainder. In the decade 1941-50, the number of deaths attributed to pulmonary tuberculosis ranged from 113 to 261 a year, with peaks of prevalance associated with large migrations of immigrants.

Although tuberculosis has long been regarded as a major cause of sickness and death in the Colony, few facilities for diagnosis and treatment existed before 1945. In that year, the health authorities initiated a campaign for the reduction of tuberculosis in all ecopomic groups of the population. The diagnostic services were reorganized and X-ray equipment provided. Special wards were also added to the civilian hospitals; the number of beds available for the treatment of tuberculosis was increased from 18 in 1945 to 150 in 1951. As a further preventive measure, a program of supervised domiciliary treatment was introduced in 1947 to furnish care to persons who could not be hospitalized.

Following the organization of the antituberculosis campaign, there was a decrease in the specific death rates from around 29.3 per 10,000 population in the period 1931-44 to 11.3 in 1950. In the latter year, the corrected rate for the local population alone was 8.4 per 10,000. A tuberculin testing and BCG inoculation program was planned for 1952 by the Medical and Health Department, in co-operation with the World Health Organization.

Smallpox. In spite of the fact that localized epidemics of smallpox are recurrent in the Protectorate, no outbreaks have been

A 164 porting, 2,018 and 2,325 cases, respectively, were recorded. Of these, 59 to 63 per cent were diagnosed as syphilis and 31 to 34 per cent as gonorrhea, while chancroid predominated in the remainder. Some indication of the prevalence of syphilis is provided by the results of serologic examinations of blood specimens taken from individuals admitted to tubeculosis wards. In a series of Kahn tests performed on 243 cases in 1950,[7] positive reactions were obtained in 13 per cent. Centers for the treatment of venereal diseases have been established at the Civil Hospital, in Aden township, and at the Keith Falconer Mission Hospital, in Sheikh Othman.

A 164 758

H 164 Syphilis and gonorrhea are reputed to be common in the towns of the Protectorate, but no reliable information is available. A nonvenereal treponemal infection, believed to be bejel by most authorities, has been reported from various localities in southern Arabia. A focus probably exists around Beiham, in Western Aden Protectorate. Cases are observed from time to time in the Colony hospitals among persons from this area, as well as from Yemen.

H 164 515 **Diseases of the Eyes.** Trachoma and conjunctivitis are major problems, particularly in the Protectorate, where environmental conditions and the unhygienic customs of the people promote the spread of infectious eye diseases. Trachoma is frequent among the schoolchildren in the Colony. In a survey conducted in 1946,[8] the incidence of trachoma was found to be 18.9 per cent among 1,103 boys examined in the government schools. Measures for improved diagnosis and treatment were instituted, with an appreciable decrease in infection. In a similar group of 1,419 boys observed in 1948, evidence of trachoma was detected in 9.8 per cent.

H 164

H 164 659 Less is known of the extent of the disease in the interior. A medical survey in Western Aden Protectorate in 1939-40[20] revealed widespread trachoma infection, with rates varying from 14 per cent in Dhubiyat to

75 per cent in Shuqra. In most localities, the infection rates ranged from 27 to 88 per cent among children under 15 years of age and from zero to 48 per cent in persons over 15 years of age. The Fadhli and the Abdali tribal districts were the most seriously affected regions visited. H 164 659

Diseases of the Skin. Favus, ringworm and other mycotic skin infections are widely distributed. Madura foot is common in the Protectorate, and cases are seen in the Colony hospitals each year among patients from the interior. Phagedenic ulcers are responsible for considerable disability among laborers in the Colony and in all parts of the Protectorate. Several thousand cases are treated each year in the hospitals and the dispensaries in Aden Colony, where they are usually designated as "Yemen ulcers." The ankle is the most frequent site of infection, and amputation is often necessary in neglected cases. A H 164 167 A 758

Scabies and impetigo are prevalent, especially among the children of inland towns and villages who live under congested, insanitary conditions. By contrast, surprisingly few cases of scabies are encountered among the children seen in the schools in Aden township. A H 164 511 515

Leprosy. Leprosy is endemic in the Protectorate, but no indigenous cases have been reported from the Colony within recent years. The infection is probably not extensive, although foci of the disease are known to exist in the Hadhramaut and in the Lahej, the Dhala' and the Abyen areas in the western protectorate. As lepers are not discriminated against socially, some difficulty is encountered in controlling the movement of infected individuals in the Colony. A small leper hospital is located at Sheikh Othman: it receives patients not only from Aden territory but also from Yemen. Eighteen of the 29 patients in residence in 1939[18] were open nodular or lepromatous cases. A H 164 A H 164 743 164 183

Other Infections. Tetanus is endemic, but reported cases are rare. A H 164

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ADEN MM1
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Diseases Spread by Arthropods

Malaria. Little or no indigenous malaria exists at present in the Colony. From 1,000 to 2,000 malaria patients are treated each year in the civilian hospitals and dispensaries, but, with the exception of occasional cases of questionable origin, the infection has almost invariably been acquired outside the limits of the Colony, usually in the interior. Until recent decades, malaria was highly endemic in the oasis of Sheikh Othman and surrounding villages, and sporadic outbreaks were experienced in the town of Aden. Anopheline control work was initiated in 1909 and extended on a colony-wide basis in the 1930s. As a result, the disease was early eliminated from Aden, while its prevalence was progressively reduced in Sheikh Othman. The number of local cases treated at the Keith Falconer Mission Hospital declined from almost 2,000 a year in 1907 to zero in 1950. The last outbreak of malaria was recorded in 1943 among the transient laborers living in *kutcha* hut settlements in Sheikh Othman. At that time, *Anopheles adenensis* (— *A. culicifacies adenensis*), the principal vector, was found breeding in the soakpits. Antianopheline measures are carried on continuously in the Colony and adjacent sections of the Protectorate, and vector species have been eradicated almost completely.

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A 744 464 164

H A 744

Malaria occurs in most portions of the Protectorate, exclusive of the desert regions and the mountainous areas at the higher elevations. In the 1939-40 survey of Western Aden Protectorate, all gradations of endemicity were encountered. In general, the infection was hyperendemic in the vicinity of perennial streams and moderately endemic in villages around wadies which remained dry for most of the year. The splenic index ranged from 40 to 92 per cent in different localities. Extensive epidemics have been recorded from the highland districts, especially from the Dhala' and the Yafa'i country. Both *Plasmodium falcip-*

H 164

H 164 136

H 164 136 arum and *P. vivax* are found in most regions, but *P. malariae* is apparently relatively rare. *A. gambiae* is widely distributed, and is regarded as the principal vector in the Protectorate.

H A 164 Rickettsial Infections. Louse-borne typhus has been recognized in the highlands of southwestern Arabia since 1939, and occasional imported cases are admitted to hospitals in the Colony. In 1944-45, epidemics of typhus were recorded from Western Aden Protectorate which were secondary A 164 167 744 to foci in Yemen. The disease first appeared in Aden in January, 1944, among Jewish emigrants who had traveled overland from Yemen and were awaiting transport to Israel. Fifteen cases were reported, all but 2 of which were members of the Jewish community. The movement of Yemenis across the frontiers was restricted, and a camp at Lahej which at that time harbored some 1,600 Jewish emigrants was transA 167 758 744 ferred to a quarantine site in the desert. Sick individuals from the Jewish quarters in the town were removed to the camp, and wholesale delousing measures were enforced both at the camp and in infected areas in the town. The spread of the infection in the Colony was curtailed, but new outbreaks developed in the Amiri and the Subeihi tribal districts, near the Yemeni border, and progressed along the trade routes to within 40 miles of Aden Colony. The importance of the port and military installations during the prevailing war emergency necessitated the creation of a sanitary cordon to isolate the Colony from the interior.

A 164 744 The infection persisted in epidemic form in the Protectorate, spreading eastward to the Dhala' plateau and the mountainous villages of the Lower Yafa'i country. In many localities, 10 to 25 per cent of the inhabitants are believed to have suffered from the disease. Insecticidal powders, as well as antityphus vaccine, were supplied by the United States Typhus Commission, and mass dusting campaigns were carried on in the villages visited by the medical

ADEN MM1
HADHRAMAUT MM2

A 164 744 officers. Special delousing stations were established along the 3 main trade routes from Yemen to guard against the development of new foci.

The prevalence of the infection diminished during the summer months, but sporadic outbreaks were again reported in the winter of 1944-45. Early in 1945, a series of permanent dispensaries was organized in Western Aden Protectorate, and the tribal dressers in charge were trained to undertake mass dusting of the populace with DDT powder in the event of further epidemics. No outbreaks of typhus have been reported from the Protectorate since 1945, although the disease has continued to smolder in Yemen.

H 164 743 744

A 164 Murine typhus is probably endemic. Suspected cases have been observed in Aden hospitals from time to time, but the diagnosis has not been confirmed by laboratory diagnosis.

Plague. Six outbreaks of plague have been recorded from the Colony within the present century—in 1899-1900, 1903-04, 1904-05, 1913-14, 1917-18 and 1927-28. The most serious epidemics were those of 1904-05, involving 2,299 known cases, and of 1927-28, with 1,494 cases and a fatality rate of 74 per cent. In each outbreak the initial cases were detected among dock laborers employed in moving cargo or in loading or unloading coal. Since evidence of a preliminary rat epizootic was lacking, the local authorities concluded that the disease had been introduced by infected workers or by individuals carrying infected fleas. It was considered probable that the rat infection was secondary to the human. The morbidity rates almost invariably reached a peak in February or March, and declined with the onset of hot weather. No plague has been reported from the Colony since 1928, but the danger of its importation by means of dhow traffic from endemic ports in Africa and the East is always present. The Medical and Health Department carries on an active rat control program, and examines significant numbers of captured rats each

A [165] A 164 464 232

A [165]

H A 744

year for evidence of plague. The disease has not been reported from the Protectorate.

Other Infections. Localized outbreaks of louse-borne relapsing fever have been recorded from the Protectorate, but no indigenous cases have been encountered in Aden. Cases of relapsing fever were frequently discovered at the time of the typhus outbreaks in 1944-45.

Occasional cases of kala-azar are seen in the Colony hospitals, usually among immigrants from Yemen. Two cases, in which the diagnosis of kala-azar was confirmed by spleen puncture, were recently reported from the Civil Hospital.[10] Both originated in southern Yemen, one from the vicinity of Ta'izz and the other from a village near the border of Western Aden Protectorate. Sporadic cases of Oriental sore are also treated in Aden, but the extent of infection in the interior is uncertain.

Cases suspected of being sandfly fever are common. The vector, *Phlebotomus papatasii*, is widely distributed. Guinea worm infection is endemic in the Hadhramaut and in certain coastal districts in the Protectorate. Imported cases are often observed in Aden Colony. Travelers from endemic centers in Africa thought to be suffering from yellow fever are sometimes admitted to the Colony hospitals, but no indigenous cases have been reported.

Nutritional Diseases

Undernutrition is prevalent, particularly among the immigrant laborers in Aden and the poorer villagers and the Bedouin in the interior. Few studies of the prevalence of nutritional diseases have been made, but, in view of the inadequate diet of large sections of the population, deficiency conditions are probably numerous, particularly as regards protein and vitamins C, A and riboflavin of the B complex. Rickets is common in the Protectorate, while minor symptoms of the disease were detected in 17 per cent of 264 schoolchildren examined in Aden township in 1945. Spongy gums, gingivitis and other signs of vitamin C de-

ficiency are widespread. Pellagroid lesions of the skin are often encountered among the peoples of the Protectorate. In a survey of 518 Arab schoolboys in Aden township in 1949, no cases of overt deficiency were found, but enlargement of the liver, possibly suggestive of low protein intake, was revealed in 27 per cent.

Miscellaneous Conditions

A small outbreak of epidemic muscular rheumatism, classified as Bornholm disease, was reported from Aden in 1946. It involved 35 persons—34 British and 1 Arab.

Hepatic cirrhosis is one of the most frequent conditions seen at the Civil Hospital. Local physicians have noted that most of the cases come from malarious regions where qat is widely used, but the underlying causes have not been investigated.

Chewing the leaves of *Catha edulis*, or qat, is a general custom in Western Aden Protectorate. The leaf juices contain a stimulant, and habitual indulgence is said to produce loss of appetite, sleeplessness and a variety of more serious nervous disorders. Local observers believe that addiction to the drug contributes to the widespread undernutrition among the people.

SUMMARY

The Colony of Aden and the adjacent Protectorate, on the southern coast of Arabia, have been British dependencies for over a century. The population of the Colony, including the port of Aden, was enumerated at 80,516 in the census of 1946, and calculated at over 100,000 in 1950. The Protectorate territory comprises two administrative divisions—Western Aden Protectorate and Eastern Aden Protectorate, in which the estimated population for 1948 was about 350,000 and 300,000, respectively. The local governments are tribal and diverse in organization, ranging from sultanates to smaller autonomous units. The inhabitants of both the Colony and the Protectorate are predominantly Arabs and adherents of Islam.

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the Colony. Undernutrition and avitaminosis are widespread, but the prevalence of specific nutritional deficiencies is not accurately known.

Dysentery, tuberculosis, trachoma and malaria are the most prominent disease problems, although indigenous malaria has now been largely eradicated from the Colony. Smallpox is frequently epidemic in the interior, but vaccination is compulsory in the Colony, and no outbreaks of local origin have been recorded since 1929. Serious epidemics of louse-borne typhus have occurred within recent years in the Western Aden Protectorate. Skin diseases, pneumonia, helminthiases and venereal infections are prevalent and widely distributed. Tyhoid fever, measles and other respiratory diseases of childhood, and probably murine typhus and sandfly fever, are endemic. Leprosy, schistosomiasis and louse-borne relapsing fever exist in certain localized areas. Diphtheria, meningococcus meningitis and poliomyelitis are sporadic in the Colony and probably in the Protectorate. The last outbreak of plague in the Colony was recorded in 1928, while cholera has not been present within this century. Cases of kala-azar, Oriential sore, hookworm and guinea worm infection are occasionaly admitted to the Colony hospitals among individuals from the Protectorate or Yemen.

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the greater part of the year, in certain places. These interruptions are due to the entire volume of water—which in dry seasons is not very considerable—being led off into the cultivation and returned again lower down. It is said that the waters of the Tiban, like those of the Bana, occasionally reach the sea after abnormal floods. The Bana River runs continuously from May to October.

The coast-line generally is low and sandy and devoid of promontories or inlets of any size, except at Aden, where craterous promontories rise to about 1,700 ft. above sea-level, forming sheltered bays, and at a point some sixty miles west of Aden, where a spur of the Yemen highlands approaches the coast at Khōr 'Umeirah.

Climate

In the first zone—the littoral—the heat in general is excessive, but the climate is not unhealthy for those who can stand the fierce heat of the day, and the nights are cool. The cultivated oases and river-beds, however, which afford grateful shade by day, should be avoided as fever traps, and the Tiban valley and Lahej oasis in general have an ill name for malaria of a malignant type. The only rainfall is afforded by a few showers in mid-winter. Cultivation depends chiefly on irrigation from the wādi water-courses, and consists almost entirely of millet, *jowari*, and tall fodder crops such as *kirbi*.

In the second zone—the maritime hills—the rainfall is as in the first zone; but there is no opportunity for wādi irrigation, and in consequence scarcely any crops are raised. The air is stifling by day and damp at night.

In the third zone—the intramontane plains—the rainfall takes place during the summer in occasional thunderstorms. The crops are millet and maize, and they become more abundant and fertile as the main watershed is approached. The heat here, again, is very great.

In the fourth zone—the main watershed—there is a considerable rainfall during the summer months, and a bracing and fairly equable climate with sometimes a degree or so of frost at night. Cultivation is scanty, chiefly barley and a few light fodder crops.

In the fifth zone—the plateau—water lies within ten feet or so of the surface, and there is a good deal of irrigation from wells, besides the regular rainfall. This is small, but from October to March the region is liable to dense white fogs which fall after dark and lie thick to 9 a.m. They will wet one through in an hour, but are invaluable to the farmer as they alone keep the crops alive till

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the summer thunderstorms are due. These latter are often extremely violent, even terrifying. Hail occasionally falls. Harvesting of one crop or another goes on throughout the year—chiefly bearded wheat, barley, maize, lucerne, and coffee (but the latter is less frequent than over the Yemen border). Indigo and cotton (a very small bush) are grown in the Nisāb district and grapes on the Yemen border.

In the sixth zone—the Empty Quarter or Great Red Desert—the population is pastoral and follows the grazing according to the rainfall, which is irregular and scanty. Along the principal wādis, which lead north towards the desert, there are permanent settlements and cereal crops are raised, chiefly millet, the stalks of which make useful fodder when grazing is scarce. The semi-nomadic part of the population returns to the settlements to await the next grazing-season in the desert.

In the Aden Interior as a whole the prevailing diseases are small-pox, fever (especially malarial), and, to some extent, consumption. The ' Yemen ulcer ' is also common among the tribes.

Population

The population of the Aden Interior (considered as a whole, and including that portion known strictly as the Aden Protectorate), settled and nomadic, may be computed at about half a million. The district is composed of a number of Tribal Confederations or Sultanates, some lying within the limits of the Protectorate proper, some without.

The limits of the Aden Protectorate proper are the delimitation line, previously mentioned, from Ras Turbah to a point some few miles north of Dhāla, and thence a somewhat vaguely defined line continuing at first in a south-easterly direction and then in a generally easterly direction to the coast of the Gulf of Aden near the small settlement of Maqātīn. They enclose an area of about 4,200 sq. miles, having a population of 100,000. The tribal confederations lying within this boundary are: the Subeihi, 'Abdāli, Fadhli, Haushabi, Amīri, 'Alawi, 'Aqrabi, and other smaller tribes; and without are the Yāfa', 'Aulaqi, Beida, Oleh, and 'Audillah ('Audali). The tribes of the Protectorate have a larger proportion of non-combatants and are more settled than those of the remoter interior; the bulk are to be found in the towns and villages of the littoral belt, the chief centres being Lahej, Waht, Shūghrah, and the Abiyān district.

In dealing with a variety of tribes with such different characteristics it is difficult to generalize; broadly they may be divided

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of Sheikh 'Othmān and small village of Hiswah on the north-east, at a radius roughly of ten miles from Aden town. The island of Socotra, in the Arabian Sea, passed under the protection of the British Government in virtue of a treaty concluded with the Sultan of Mahrah in 1886 (p. 205).

The peninsula of Aden proper is an irregular oval, 15 miles in circumference, with a diameter of from 3 to 5 miles, connected with the mainland by a neck of land about 1,350 yards wide, but at one place nearly covered at high spring tides. The causeway and aqueduct, however, are always above, although at some seasons only just above, water level. The peninsula consists of a huge crater walled round by precipices, the highest point being 1,775 feet above the sea; and rugged spurs, with valleys between, radiate from the centre. A great gap in the circumference of the crater has been rent on its eastern sea-face by some later volcanic disturbance. The town of Aden and part of the military cantonment lie within the crater, and consequently are surrounded on all sides by rocky hills. Lavas, spongy breccias, and tufas form the materials of this volcanic fortress. The natural vegetation is very scanty and resembles that of Arabia Petræa.

The average shade temperature of Aden is 87°—the mean monthly range being from 75° in January to 98° in June, with occasional variations up to or exceeding 102°. The lulls between the monsoon periods, in May and September, are specially oppressive. The mortality among Europeans, although greatly increased by the sick or dying from the passengers and crews of ships, amounts to only 7·2 per thousand. Aden, in fact, ranks as a rather healthy station for troops, though on first arrival they are subject to sandfly-fever, and it is a well-ascertained fact that long residence impairs the faculties and undermines the constitution of Europeans. The climate during the north-east monsoon, or from October to April, is cool and pleasant, particularly in November, December, and January. During the remainder of the year (the period of the south-west monsoon), hot sandy winds, known as *Shamāl* (north), prevail within the crater, but on the western or Steamer Point side the breezes come directly off the sea and are fairly cool. The rainfall may be said to vary from ¼ inch to 8½ inches, with an irregular average of about 3 inches; the irregularity and smallness of the yearly rainfall is borne out by the fact that the tanks, since their restoration in 1856, have only been filled six times—in May 1866 and 1870, and September 1877, 1889, 1893, and 1897. The Settlement is exceptionally free from infectious diseases and epidemics. The absence of vegetation, the dryness of the soil, and the

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purity of the drinking water constitute efficient safeguards against many maladies common to tropical countries.

The harbour of Aden—the Bandar Tawīyah, or Aden West Bay, but more generally known as Aden Back Bay—lies between the two lofty peninsulas, very like in appearance, of Jebel Shamshan (east) and Jebel Ihsan (west); it extends eight miles from east to west and four from north to south, and is divided into two bays by a spit of land. The depth of water in the western bay is from 3 to 4 fathoms, and, across the entrance, from 4½ to 5 fathoms. There are several islands in the inner bay, notably Jezīrah Sawāyih (Slave Island), which culminates in a peak 300 ft. in altitude.

The port of Aden is a great coaling-station and place of call for vessels passing to and from the Suez Canal. Large vessels lie off Steamer Point, the western extremity of Jebel Ihsan. The Peninsular and Oriental Navigation Company's steamers call weekly at the port to receive, tranship, or land passengers and mails, and it is a port of call for a number of other important lines. There are numerous lights and lightships, the chief being the Aden Cape Light at Ras Marshag, on the east of the Ihsan peninsula, visible for 20 miles, and the Elephant's Back Light on the summit of a headland, visible also for 20 miles; the Aden Lightship, not far from Steamer Point, is visible for 10 miles, and fires a gun whenever a vessel enters the harbour at night.

Of the total population of the Aden Settlement (46,000), about 23,000 are returned as Arabs and there is a large number of Somalis. These two sections do the hard work of the port, but among the Arabs there are a few merchants of substance. Almost every nationality is also represented: Hindus, Parsees, Persians, Chinese, Abyssinians, Jews, &c. The Parsees have annexed a very considerable portion of the trade, for they act as agents and shopkeepers, and their business talent equals that of the Jews. Classified otherwise, European residents and Christians number from 2,000 to 3,000; Mohammedans, 34,000; and Jews, 3,700. The natives have an untidy makeshift air which contrasts with the personal cleanliness of an Indian population, and this arises partly from the scarcity of water, and partly from the temporary nature of their residence and outdoor life.

As far as the Settlement is concerned, there are no natural products whatever with the exception of salt. The food of the whole population, civil and military, is imported, Aden producing not even a blade of grain. Rice comes from Calcutta, Bombay, and Malabar; *jowari*, *bajri*, and maize are brought on camels from the interior; fodder and firewood come from the Lahej and Fadhli districts.

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132 whirlwinds, from all sides, which disturb the dust. According to the Arabs, a particularly hot windless period of about forty days occurs with the changing of the monsoons. All travellers in the Hadhramaut make frequent allusions to the intensely high temperatures experienced in the narrow confined wādis of the interior.

164 Van den Berg says: 'Sicknesses are relatively few, which is quite natural, seeing the simple life led by the people, the pure and generally dry atmosphere of the mountains, and the total abstention of the people from pork, opium, and alcohol. Cholera is unknown, small-pox is never epidemic, but consumption is rampant, and there are cases of leprosy.'

Population

162 The total population of the Hadhramaut is extremely uncertain, and the various authorities give very divergent estimates. Mons. Babahir, whom Van den Berg cites as having had considerable facilities for judging, estimates it at about 150,000, which he distributes as follows:

From Shibām to Shabwah, including Wādis 'Irmah, Dahr, and Rashah	20,000
Wādis 'Amd, Dō'an, and 'Ain	25,000
Shibām to Terīm (inclusive)	50,000
Terīm to Seihūt	6,000
From N. of the main wādi to the desert	15,000
From S. of the main wādi to the sea	16,000
Shiheir, Makalla, and their environs	18,000
Total	150,000

Van den Berg, however, considers this estimate to be excessive, seeing that the greater part of the region is uninhabitable and unsuitable for agricultural pursuits of any kind. He himself gives the total of the chief centres of population of the interior, viz. Seyyūn, Terīm, Shibām, Ghurfah, and 'Aināt (or 'Ināt), as certainly not exceeding 29,500.

144 The people are known as *Hadhrami* and belong generally to the South Arabian stock, claiming descent from Ya'rab ibn Qahtān. There is, however, a large number of 'Seyyids', or descendants of the Prophet (described more fully below), and of 'townsmen' of northern origin, besides a considerable class of African or of mixed descent. But in spite of these variations the Hadhrami form, geographically and socially, a remarkably homogeneous whole.